

Appl. No. 09/355,673

(II) repeating units which are derived from a monomer having a urethane or urea bond and one carbon-carbon double bond, but no fluorine atom,

(III) repeating units which are derived from a monomer having a carbon-carbon double bond, the homopolymer of said monomer having a glass transition temperature (T_g) of 50°C or less,

(IV) optional repeating units which are derived from a monomer having a hydrophilic group and a carbon-carbon double bond, and

(V) optional repeating units which are derived from a monomer having a chlorine atom and a carbon-carbon double bond and

(B) a film-forming auxiliary consisting of an organic solvent which dissolves or swells the copolymer, wherein at least one of the repeating units (IV) and the repeating units (V) is essential, and said film-forming auxiliary (B) has a solubility parameter (δ) at 25°C in the range between 8 and 11, said film-forming auxiliary (B) is at least one solvent selected from the group consisting of alcohols, glycol ethers, linear or cyclic silicones, esters, diesters, ketones and ethers, and the composition is in the form of an aqueous dispersion of the copolymer dispersed in a medium comprising water in the presence of a nonionic, cationic or anionic emulsifier.

Appl. No. 09/355,673

19. (Amended) A water and oil repellent product comprising a water and oil repellent as claimed in claim 17 which is charged in a container equipped with a mechanism for spraying a liquid outside of said container.

20. (Amended) A water and oil repellent product comprising a water and oil repellent as claimed in claim 17 which is charged in a container equipped with a mechanism for propelling a liquid outside of said container using a pressure.

22. (Amended) A water and oil repellent product comprising a water and oil repellent as claimed in claim 21 which is charged in a container equipped with a mechanism for foaming and propelling a liquid outside of said container.

23. (Thrice Amended) A method for imparting water and oil repellency to a substrate comprising applying a composition as claimed in any one of claims 1 to 14 on said substrate by spraying, coating or dipping by using a water and oil repellent product as claimed in any one of claims 18 to 20 and 22.

27. (Amended) A water and oil repellent product comprising a water and oil repellent as claimed in claim 25 which is charged

Appl. No. 09/355,673

in a container equipped with a mechanism for spraying a liquid outside of said container.

28. (Thrice Amended) A method for imparting water and oil repellency to a substrate comprising spraying a composition as claimed in any one of claims 1 to 14 on said substrate by using a water and oil repellent product as claimed in claim 27.

33. (Thrice Amended) A method for imparting water and oil repellency to a substrate comprising applying a composition as claimed in any one of claims 1 to 14 on said substrate by using a water and oil repellent product as claimed in claim 30 or 32.

34. (Amended) A copolymer comprising

(I) repeating units which are derived from a monomer having a fluoroalkyl group, a carbon-carbon double bond, and optionally a urethane or urea bond,

(II) repeating units which are derived from a monomer having a urethane or urea bond and one carbon-carbon double bond, but no fluorine atom,

(III) repeating units which are derived from a monomer having a carbon-carbon double bond, the homopolymer of said monomer having a glass transition temperature (T_g) of 50°C or less,

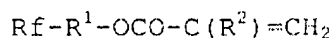
Appl. No. 09/355,673

(IV) optional repeating units which are derived from a monomer having a hydrophilic group and a carbon-carbon double bond, and

(V) optional repeating units which are derived from a monomer having a chlorine atom and a carbon-carbon double bond, wherein at least one of the repeating units (IV) and the repeating units (V) is essential.

35. (Amended) A copolymer comprising

(I) repeating units which are derived from a monomeric compound of the formula:



wherein R^f is a linear or branched fluoroalkyl group having 3 to 20 carbon atoms;

R^1 is a linear or branched alkylene group having 1 to 20 carbon atoms, a group of the formula: $-SO_2N(R^3)R^4-$ or a group of the formula: $-CH_2CH(OR^5)CH_2-$ in which R^3 is an alkyl group having 1 to 10 carbon atoms, R^4 is a linear or branched alkylene group having 1 to 10 carbon atoms, and R^5 is a hydrogen atom or an acyl group having 1 to 10 carbon atoms; and

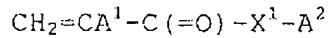
R^2 is a hydrogen atom or a methyl group,

(II) repeating units which are derived from a monomer having a urethane or urea bond and one carbon-carbon double bond, but no fluorine atom,

Appl. No. 09/355,673

(III) repeating units which are derived from a monomer having a carbon-carbon double bond, the homopolymer of said monomer having a glass transition temperature (T_g) of 50°C or less,

(IV) optional repeating units which are derived from a monomeric compound of the formula:



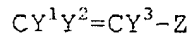
wherein A¹ is a hydrogen atom or a methyl group;

X¹ is -O-, -CH₂- or -NH-,

A² is a hydrogen atom, a hydrophilic group or a group having a hydrophilic group,

and

(V) optional repeating units which are derived from a monomeric compound of the formula:



wherein Y¹ and Y² are each a hydrogen atom or a fluorine atom;

Y³ is a hydrogen atom, a fluorine atom, a chlorine atom or a methyl group; and

Z is a chlorine atom or a chlorine atom-containing group,

wherein at least one of the repeating units (IV) and the repeating units (V) is essential.